	Application No.	Applicant(s)	
Notice of Allowability	09/710,605	MCCAW, KELLY ROBERT	
	Examiner	Art Unit	
	Miranda Le	2167	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address*--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 02/23/2006.

2. ☒ The allowed claim(s) is/are 1, 5, 6, 8-11, 15, 16, 18-21, 25, 26, 28-30.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

         1. ☐ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

         3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

     * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

     (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

         1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

     (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

Miranda Le
April 28, 2006

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

2.   Authorization for this examiner's amendment was given in a telephone interview with

Mr. Bosco Kim on April 24, 2006.

3.   The application has been amended as follows:

- Cancel claim 7.

- Claim 1 has been amended as:

A method for synchronizing data records between plural databases comprising the steps of:

a) designating a first database as a source database and a second database as a target
database;

b) determining a state of a first modification flag and a second modification flag, said first
modification flag contained in a first data record in said source database, said second
modification flag contained in a first data record in said target database, wherein said first
modification flag indicates that said first data record in said source database has been
modified and wherein a value of said first modification flag, indicative of a particular event,
is set upon an occurrence of said particular event, wherein said second modification flag
indicates that said first data record in said target database has been modified and wherein a
value of said second modification flag, indicative of a second particular event, is set upon an
occurrence of said second particular event;

c) provided that said first modification flag is set and said second modification flag is not
set, propagating said first data record in said source database to said first data record in said
target database;

d) provided that said first modification flag is not set, comparing a first modification count contained in said first data record in said source database with a second modification count contained in said first data record in said target database, said first and second modification counts each being a value indicating how many times said first data record in said source database and said first data record in said target database has been modified respectively;

e) provided that said first modification count has a higher value than said second modification count, propagating said first data record in said source database to said first data record in said target database, wherein said steps a) through e) can be completed without comparing raw data of said first data record and said corresponding data record;

f) incrementing said second modification count to said high value of said first modification count;

g) repeating said steps a) through f) until all of said data records in said source database have been processed: and

h) re-designating said second database as said source database and said first database as said target database; and

i) performing said steps a) through g) until all of said data records in said source database have been processed,

wherein said step c) comprises the step of marking said first data record as deleted in said target database, provided that said first modification flag is set to indicate that said first data record has been deleted from said source database and that said first data record exists and is not already marked as deleted in said target database.

- Cancel claim 17.

- Claim 11 has been amended as:

A computer system comprising a processor coupled to a bus and a memory unit coupled to said bus, said memory unit having stored therein instructions that when executed implement a method for synchronizing data records between databases, said method comprising the steps of:

a) designating a first database as a source database and a second database as a target
database, said first database residing in said memory unit of said computer system;

b) determining a state of a first modification flag and a second modification flag, said first
modification flag contained in a first data record in said source database, said second
modification flag contained in a first data record in said target database, wherein said first
modification flag indicates that said first data record in said source database has been
modified and wherein a value of said first modification flag, indicative of a particular event,
is set upon an occurrence of said particular event, wherein said second modification flag
indicates that said first data record in said target database has been modified and wherein a
value of said second modification flag, indicative of a second particular event, is set upon an
occurrence of said second particular event;

c) provided that said first modification flag is set and said second modification flag is not
set, propagating said first data record in said source database to said first data record in said
target database;

d) provided that said first modification flag is not set, comparing a first modification count
contained in said first data record in said source database with a second modification count
contained in said first data record in said target database, said first and second modification
counts each being a value indicating how many times said first data record in said source
database and said first data record in said target database has been modified respectively;

e) provided that said first modification count has a higher value than said second
modification count, propagating said first data record in said source database to said first data
record in said target database, wherein said steps a) through e) can be completed without
comparing raw data of said first data record and said corresponding data record;

f) incrementing said second modification count to said high value of said first modification
count;

g) repeating steps a) through f) until all of said data records in said source database have
been processed;

h) re-designating said second database as said source database and said first database as said
target database; and

i) performing said steps a) through g) until all of said data records in said source database
have been processed,

wherein said step c) of said method comprises the step of marking said first data record as
deleted in said target database, provided that said first modification flag is set to indicate that
said first data record has been deleted from said source database and that said first data
record exists and is not already marked as deleted in said target database.

• Cancel claim 27.

• Claim 21 has been amended as:

A computer readable medium having embodied therein computer readable code for causing a
computer system to implement a method for synchronizing data records between databases,
said method comprising the steps of:

a) designating a first database as a source database and a second database as a target
database;

b) determining a state of a first modification flag and a second modification flag, said first
modification flag contained in a first data record in said source database, said second
modification flag contained in a first data record in said target database, wherein said first
modification flag indicates that said first data record in said source database has been
modified and wherein a value of said first modification flag, indicative of a particular event,
is set upon an occurrence of said particular event, wherein said second modification flag
indicates that said first data record in said target database has been modified and wherein a
value of said second modification flag, indicative of a second particular event, is set upon an
occurrence of said second particular event;

c) provided that said first modification flag is set and said second modification flag is not
set, propagating said first data record in said source database to said first data record in said
target database;

d) provided that said first modification flag is not set, comparing a first modification count
contained in said first data record in said source database with a second modification count
contained in said first data record in said target database, said first and second modification

counts each being a value indicating how many times said first data record in said source database and said first data record in said target database has been modified respectively;

e)   provided that said first modification count has a higher value than said second modification count, propagating said first data record in said source database to said first data record in said target database, wherein said steps a) through e) can be completed without comparing raw data of said first data record and said corresponding data record;

f)   incrementing said second modification count to said higher value of said first modification count;

g)   repeating said steps a) through f) until all of said data records in said source database have been processed;

h)   re-designating said second database as said source database and said first database as said target database; and

i)   performing steps a) through g) repeatedly until all of said data records in said source database have been processed,

wherein said step c) of said method comprises the step of marking said first data record as deleted in said target database, provided that said first modification flag is set to indicate that said first data record has been deleted from said source database and that said first data record exists and is not already marked as deleted in said target database.

• Cancel claims 31-33.

4.   The following is an examiner's statement of reasons for allowance:

The present invention is directed to systems and methods for synchronizing data records between plural databases, wherein the use of modification flag of data records in conjunction with a modification count enables faster data synchronization between different databases

Claims 1, 11, 27 identify the uniquely distinct feature of having a modification flag contained in the data record which is indicative of a particular event; and marking said first data

record as deleted in said target database, provided that said first modification flag is set to indicate that said first data record has been deleted from said source database and that said first data record exists and is not already marked as deleted in said target database.

The closest prior art, Boothby et al. (U.S. Patent No. 6,044,381), shows a substantially similar databases synchronization method. However, the flag of Boothby is not contained in the corresponding record. Instead the flag is contained in the information sent from the remote segment to the host computer. The flag of Boothby is not set when a modification of the corresponding record occurs but is set upon a comparison of the records from the remote database and the host database against a history file. Therefore, Boothby fails to anticipate or render the above-cited limitations obvious.

5.   Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance".

Conclusion

6.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Miranda Le whose telephone number is (703) 305-3203. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John E. Breene, can be reached on (703) 305-9790. The fax number to this Art Unit

is (703) 872-9306. The TC 2100's Customer Service number is (703) 306-5631.

Any inquiry of a general nature or relating to the status of this application should be

directed to the Group receptionist whose telephone number is (703) 305-3900.

Miranda Le
April 28, 2006

JOHN R. COTTINGHAM
PRIMARY EXAMINER